

REMARKS

The Final Office Action mailed October 16, 2006 considered and rejected claims 1-33. Claims 19, 30 and 31 were rejected under 35 U.S.C. 101 because the claimed invention was directed to non-statutory subject matter. Claim 33 was rejected under 35 U.S.C. 101 because the claimed invention was directed to non-statutory subject matter. Claims 1, 2, 5-17, 19, 30, and 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Breslau et al. (US 5,761,512) hereinafter *Breslau* in view of Spyker et al. (US 6,571,389) hereinafter *Spyker* and further in view of "HotSpot" A new breed of virtual machine" by Armstrong, hereinafter *Armstrong*. Claims 3 and 4 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Breslau*, *Spyker*, and *Armstrong* as applied in the above rejected of claims 1, 2, 5-10, 12-17, 19, 30, and 31, and further in view of Fogarty et al. (US 6,721,946) hereinafter *Fogarty*. Claim 18 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Breslau*, *Spyker*, and *Armstrong* as applied in the above rejection of claims 1, 2, 5-10, 12-17, 19, 30, and 31, and further in view of Nelin et al. (US 6,253,368) hereinafter *Nelin*. Claims 20-22 and 27-29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al. (US 6,158,049) hereinafter *Goodwin* in view of Knight (US 6,126,330) hereinafter *Knight*. Claims 23 and 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Goodwin* and *Knight* as applied in the above rejection of claim 21, further in view of "Compilers: Principles, Techniques, and Tools", by Aho et al., hereinafter *Aho*. Claims 25 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Goodwin*, *Knight*, and *Aho* as applied to the rejection of claim 23 above, and further in view of *Breslau*. Claim 32 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Breslau* in view of *Spyker*, *Knight*, and *Nelin*. Claim 33 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Breslau* in view of Ramezani (US 6,457,122) hereinafter *Ramezani*.

By this amendment, claims 20-24 are amended and claims 34-40 are new.¹ Claims 1-19 and 24-33 are cancelled. Accordingly, claims 20-23 and 34-38 are pending, of which claims 20, 34, and 38 are the independent claims.

¹ Support for the amendments to the claims are found throughout the originally filed specification and previously presented claims, including but not limited to page 3, lines 7-28, page 5, line 5 – page 8, line 16, page 9, lines 3-28, page 11, lines 1-18 and Figures 1-4 and 7.

Applicants respectfully submit that the cited art of record does not anticipate or otherwise render the amended claims unpatentable for at least the reason that the cited art does not disclose, suggest, or enable each and every element of these claims.

Generally, *Goodwin* and *Knight* are directed to mechanisms for obtaining feedback from instrumented images. *Knight* is more specifically directed to the user of runtime instrumentation for providing feedback from users of object oriented applications where the applications have unique object identifiers and support dynamic data exchange. (Abstract). *Goodwin* is more specifically directed to making instrumentation transparent to the user. Profile data can be used to optimize an original version of an application. The optimized version is configured to execute just as the original, but references optimized images. (Abstract).

Armstrong describes a dynamic compiler that combines the features of a JIT compiler with an interpreter in a single package. (Page 2). When byte codes are first loaded they are run through an interpreter. The profiler keeps a record of runtimes for each method. When a method is found to be taking a lot of time HotSpot compiles and optimizes it. Every further call to that method uses native machine instructions produced by the compiler. As with a JIT the results of compilation are not kept between runs. Because bytecodes are more compact, this saves loading time as well as storage space. Dynamic compilation can take advantage of runtime information to do robust inlining.

However, the cited art fails to teach or suggest either singly or in combination:

...

the execution engine determining the appropriate execution mode for executing the functionality represented by the intermediate language image, the appropriate execution mode selected from among (a) Just-In-Time processing of the intermediate language image within the virtual execution environment and (b) execution of a compiled native code executable on an underlying platform providing the virtual environment, including:

the execution engine searching a native image repository for previously compiled native code executables corresponding to the intermediate language image that match environment characteristics of the underlying platform, the previously compiled native code executables stored along with tags indicating environment characteristics for platforms

for which the native code executables are valid, each native code executable stored in the image repository having been previously specialized from some intermediate language image for native execution on a platform having specified environment characteristics;

the execution engine determining that a matching native code executable compiled for native execution on the underlying platform is not available in the native image repository; and

the execution engine processing the intermediate language image in accordance with Just-In-Time processing in response to determining that a native code executable for execution on the underlying platform is not available in the native image repository.

as recited in claims 20 and 34. For at least this reason, claims 20 and 34 patentably define over the art of record. Since claims 21-24 and 35-38 depend from either claim 20 or claim 24, each claims 21-24 and 35-38 patentably define over the art of record at least for the same reason as their corresponding base claim. However, many of the dependent claims independently distinguish over the art of record.

For example, the cited art fails to teach or suggest the limitations of claims 21, 22, 24, and 35-37.

Additionally, the cited art fails to teach or suggest either singly or in combination:

...

determine the appropriate execution mode for executing the functionality represented by the intermediate language image, the appropriate execution mode selected from among: (a) Just-In-Time execution using the virtual execution environment and (b) execution of a compiled native code executable on an underlying platform that provides the virtual environment, including:

searching a native image repository for previously compiled native code executables corresponding to the intermediate language image that match environment characteristics of the underlying platform, the previously compiled native code executables stored along with tags indicating environment characteristics for platforms for which the native code executables are valid, each native code executable stored in the

image repository having been previously specialized from some intermediate language image for native execution on a platform having specified environment characteristics; and

determining that a previously compiled native code executable corresponding to the intermediate language image is available for native execution on the underlying platform;

access the previously compiled native code executable from the native image repository; and

execute the previously compiled native code executable on the underlying platform in lieu of processing the intermediate language image in accordance with Just-In-Time execution.

as recited in 40. For at least this reason, claim 40 patentably defines over the art of record.

Claim 39 patentably defines over the art of record for reasons similar to claims 24, 34, and 40.

The other art of record does not compensate for these deficiencies.²

In view of the foregoing, Applicant respectfully submits that the other rejections to the claims are now moot and do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicant acquiescing to any of the purported teachings or assertions made in the last action regarding the cited art or the pending application, including any official notice. Instead, Applicant reserves the right to challenge any of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicant specifically requests that the Examiner provide references supporting the teachings officially noticed, as well as the required reason why one of ordinary skill in the art would have modified the cited references in the manner officially noticed.³

² For example, *Spyker* is directed to improving the manageability and usability of a java environment. *Spyker* describes dynamically change run-times on a per-program basis, for example, between execution applications and applets. *Breslau* describes an automatic client-server compiler. During compilation, *Breslau* compiles classes for specific environments based on affinities.

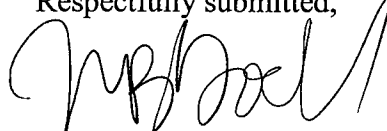
³ Instead, Applicant reserves the right to challenge any of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicant specifically requests that the Examiner provide

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at (801) 533-9800.

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to Deposit Account No. 23-3178: (1) any filing fees required under 37 CFR § 1.16; and/or (2) any patent application and reexamination processing fees under 37 CFR § 1.17; and/or (3) any post issuance fees under 37 CFR § 1.20. In addition, if any additional extension of time is required, which has not otherwise been requested, please consider this a petition therefore and charge any additional fees that may be required to Deposit Account No. 23-3178.

Dated this 11th day of December, 2009.

Respectfully submitted,



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references supporting any official notice taken. Furthermore, although the prior art status of the cited art is not being challenged at this time, Applicant reserves the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.